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## Words of the Wise Men

*Erich Bloch*

**First in an occasional series of conversations with veterans of senior science-policy positions concerning the current budget and political turbulence in Washington and its effects on the national research community.**

*An electrical engineer and computer designer, Erich Bloch spent 32 years with IBM before retiring in 1984 as Vice President for Technical Personnel Development to become Deputy Director of the National Science Foundation. Within a year, he was appointed NSF Director, and served a full six-year term—a rarity in the Foundation's history. Since 1990, Bloch has been a Distinguished Fellow at the Council on Competitiveness, a Washington-based outpost of big industry, big academe, with a dash of organized labor. Bloch spoke to SGR Editor Greenberg September 15. Following is a text of that conversation, transcribed and edited by SGR.*

**SGR.** How would you grade the Clinton Administration in science and technology?

**Bloch.** C.

**SGR.** That's pretty low.

**Bloch.** It's C. Why did I say C? I think the intentions were good. I think some of the programs that were addressed were good. Some of them were implemented well. I'm saying C because I haven't seen the dynamism in this Administration that focuses in a constructive way on science and technology, and brings the rest of the country along. I have no data. But if I compare today's view of science and technology which the American public has, compared to what it had 10-15 years ago, I think it has deteriorated in terms of understanding, in terms of the interest in it, in terms of recognizing what is good and what is bad.

**SGR.** You're referring to complaints that Clinton has never personally addressed the importance of science and technology.

**Bloch.** I think that's right.

**SGR.** That there's no Presidential identification with this sector of our society.

**Bloch.** Look, it was left up to the Vice President. And, while I admire Gore and have a high opinion of him, that's not a substitute for Presidential involvement. And it's three years in the making. I must say that as a candidate, Clinton talked more about science and technology and the effects of it than he has since he has been President.

**SGR.** Would the situation in Congress be different if Clinton were identified with this issue?

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## R&D in the Dumps at the Dawn of the New Fiscal Year

The 1995 federal fiscal year ended September 30, with the Washington research establishment in gloom about the immediate fiscal fortunes of science and technology, and gloomier about the far larger cuts written into the Republicans' long-range spending plans. The general sense of bad times for research has been heightened by uncertainty about the future of Bell Labs in the AT&T breakup and the effects that Medicare reductions will have on medical education.

Running late, Congress still has to complete work on most of the 13 appropriations bills that finance the federal government. But the pattern is clear and not likely to change. With a few exceptions, spending for government science, technology, and environmental research programs will de-

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## In Brief

The Department of Energy's three big weapons labs have survived another threat of shutdown or consolidation—though several studies have labeled them relics of a bygone era. Endorsed by the White House, the new lease on life for Los Alamos, Livermore, and Sandia was announced September 25 by DOE Secretary O'Leary. Under plans for "scientific stockpile stewardship" as an alternative to nuclear testing, she said, the President has decided the three are essential. Seven other major DOE labs also survived review.

*Nothing personal, but the Senate Commerce Committee is not hurrying to approve the nominee for one of the top posts in the Office of Science and Technology Policy, Ernest J. Moniz, former head of the MIT Physics Department, the President's pick for Associate Director for Science. The nomination, delivered to the Senate July 19, has been stalled by the August break and a busy legislative agenda. It was still becalmed last week, with Moniz at OSTP in a swatless consulting status while Cathie Woteki fills the job on an acting basis. A Congressional source told SGR that, in addition to scheduling problems, the Committee isn't keen to accommodate the White House.*

Congress tends to be squeamish about playing pork-barrel with the NIH budget, but the impulse cannot be entirely repressed, as is evident in the Senate Appropriations report for NIH, released September 15. Rather than issuing edicts for specific construction projects, the report states that the Committee is "aware" of proposals from the Medical College of Virginia, Florida A&M University, and the University of Pennsylvania Dental School, and hopes that all will receive "full and fair consideration."

## ... Under the Budget Plan, Big Cuts Are Yet to Come

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cline next year. The percentages vary from agency to agency, and some big differences between House and Senate appropriations remain to be worked out.

But the basic fact is that an absence of growth in federal R&D for the past several years has now been succeeded by absolute reductions. And this year's downward budget is only a first step toward the Republicans' grand total of approximately a 33 percent reduction by the year 2002.

The pattern and scale of the overall reductions for the new fiscal year can be seen in a tally compiled by the White House Office of Science and Technology Policy showing House appropriations for what OSTP refers to as "R&D investment funding."

Covering some 80 percent of federal civilian R&D spending, the OSTP tally shows R&D budget authority for 1995, the fiscal year that just ended, at \$23.068 billion. For 1996, the White House sought an increase of \$2.1 billion. The total voted by the House appropriators was \$1.1 billion below the 1995 figure and \$3.2 billion below the President's request.

The pattern of reductions roughly reflects Republican S&T ideology, which says basic research is a proper responsibility of government, while industrial R&D belongs to the private sector.

In the politically favored, but far from coddled basic-science sector, budgets for the new year are either stable or rising at about the pace of inflation. It appears likely that when the final returns are in, the National Science Foundation will receive a slight reduction from its 1995 level. The National Institutes of Health will fall short of the surprise 5.7-percent increase voted by the House and halved by the Senate. And the basic research programs of the Department of Energy will fare quite well.

Meanwhile, the House has voted to abolish most of the external industrial programs in the Departments of Commerce and Defense, and to eliminate EPA's Environmental Technology Program, which the White House sought to increase from \$68 million last year to \$120 million this year. The National Biological Service, which has become a grudge issue in the Republican's general animosity to the Clinton Administration's environmental policies, has been budgeted at zero by the House, but survives in truncated form in a Senate version that would attach it to the US Geological Survey.

The realization came slowly, but the capital's research mandarins and their attendants now understand that, yes, indeed, the new Republican Congressional majorities meant it when they said that science and technology would not be exempt from their plans to shrink government. And they meant it when they said the emphasis would be on reducing the federal role in environmental affairs and industrial matters. They have the votes to do it, and the common complaint in science-policy circles is that the White House has been pretty inept at battling them.

## Clinton Absent in R&D Fight

While Bill Clinton has been absent from the battle of the R&D budget, vigorous campaigns have been carried on by Vice President Gore and two senior White House officials: John Gibbons, the President's Assistant for Science and Technology, and Laura D'Andrea Tyson, head of the National Economic Council.

Gore, a research enthusiast from way back, has repeatedly attacked the Republicans on R&D. In his most recent assault, September 27 at the annual meeting of the National Academy of Engineering, Gore said Congress is planning "dramatic, indeed reckless, reductions in federal investment in research." He charged that the Republican budgets were based on ideology rather than "economic necessity."

The government must assist commercially promising high-risk research, he said, because "public and private investment in R&D in the US has been anemic for a decade." Gore urged the members to lobby Congress to save the industrial R&D programs. Tell them, he said, "there's something in the budget that's harmful to our country." Lobbying by engineers, he said, "would have a tremendous effect."

Gibbons is regularly on the speech circuit in behalf of the R&D budget, and Tyson makes a pitch for R&D with various groups that flock to meet one of the President's principal economic advisors. Her briefing paper states that the US lags in R&D spending per capita and the Republican cuts threaten not only industrial technology but "public health, public safety, the environment, and education."

On September 13, Tyson and Gibbons summoned science writers for a joint briefing. After they delivered their usual sermons, the first question asked was: "When will the President speak up on science and technology?"

Gibbons replied, "We're fully assured of the President's backing," adding that "the President has lots on his mind."

He then announced that the President was planning "a major address on science and technology," in conjunction with the presentation of the National Medals of Science and the National Medals of Technology, now scheduled for October 18.

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## ... It Took 2 Years to Create President's S&T Council

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**Bloch.** Yeah. There would be more of a counterweight. Definitely. Can you make up for it? Well, it's difficult. Another thing is that if you look at PCAST [President's Committee of Advisors for Science and Technology], it took a long time before it came into existence, two years. And there was only one meeting with the President [July 11]. So, that says something. It's a Presidential advisory board, after all. It's not the Vice President's advisory board.

**SGR.** Were things better under Reagan?

**Bloch.** The start of the Reagan Administration, the first year, was pretty bad, because it made cuts all over the science arena. But, after that, it turned around and improved significantly. And the big increases came during the Reagan Administration.

**SGR.** Backed by Democrats in Congress.

**Bloch.** Yeah, but he signed them, and he committed himself to it, committed himself to the doubling of the National Science Foundation's budget, and it's more than doubled. It might have doubled anyway. But I think there was more of a—I won't say more of an interest, because that I don't know. But the external manifestations were much more assertive than they are today. I'm not saying that everything was doing well. But at least there was a positive appearance.

**SGR.** What do you think of the demolition job your Republican friends in Congress are carrying out?

**Bloch.** I didn't know they were my friends.

**SGR.** You worked for them for six years.

**Bloch.** Wait a minute. I worked for a Republican Administration for six years. Correct. Look, both sides are wrong when they say, on the one hand, we're demolishing everything we've built up, and on the other hand, we're saving science. I don't see much evidence right now that the basic-science budget is being demolished. In fact, what I see is the preservation of it, certainly in NSF, in NIH. But if you look at what has been said by Congress, that there will be a 30 percent reduction between now and 2002 in the R&D budget, I'll say, let's watch out, because there are some things being done there that are probably not right. I haven't seen—I've asked for it—I would like to see within that envelope what the university R&D budget looks like. I haven't gotten it.

**SGR.** Given the short-term nature of public policy, is it realistic to worry about 2002?

**Bloch.** No. But let's worry about it for a minute. What bothers me in this 30 percent reduction is not the 30 percent reduction, but that we're doing the wrong things. I testified in the House last week on the future of the Department of Energy laboratories. I have no problem with reducing the DOE funding, if it's done in the right way, namely, start with DOE itself. But don't start with the engineer or the scientist at the bench in Los Alamos. Not that we shouldn't look at that. But there's such a bureaucracy that has been built up that taking 30 percent—taking 50 percent—out of that bureaucracy will improve the situation. So, I think there is

a lot of misspent money, and I think that's what one needs to go after. On the other hand, my experience with Congress is that they're not that selective. And that's what worries me.

**SGR.** Congress is being selective in some respects. They're abolishing ATP [Advanced Technology Program, in the Department of Commerce].

**Bloch.** That's one I don't agree with. Not because of ATP as a program. But I think over the years we have built up a new approach to things, namely a partnership approach between government laboratories, industry, universities. We need that and we need to preserve it. I'm not of the mind that says everything that is not basic research is corporate welfare. That's nonsense. It's one of those slogans that people are latching onto that has no great validity when you look at the data. There is a dire need, for instance, to help small companies. It's the small companies that are falling behind because of the many changes in technology. And we need to do something about it, because the country lives off it. And I don't mean "start-ups" when I say small companies. I mean the machine shop in Dayton, Ohio, as an example.

**SGR.** The Administration proposes putting \$450 million next year into ATP. When you ask for evidence that this is a wise investment, you don't get very good answers.

**Bloch.** I'm not focusing on ATP per se, but generically on that kind of program. There are many variations on the theme. I think one thing we should have learned over the years is that individual companies no longer are able to fund major new initiatives that have a payoff that's 10-15 years out, or even 7 and 8 years out. And that's what ATP was trying to address. Has it done it well or poorly? You can argue. I'll certainly argue the point in some cases. They have done it wrong and in other cases they have done it poorly. In some cases, you don't know. It is early to say. But that kind of a partnership is important. I'll give you one example from an area that is not all that glamorous in people's minds and that you don't associate with advanced technology or high-tech or whatever you want to call it. And that's the textile industry. The textile industry got together and formed a research consortium. Forty companies—very large ones, intermediate and small. And they really have been working over the last few years with some of the DOE national laboratories. And I think they're going to do something for an industry that is always under pressure, that is very important, because it means a lot of jobs, and that has never spent—I'm exaggerating—a penny on research. And I think that's good. By themselves, they couldn't have done it. Now, you can say, why not? Well, good question, why not?

I think what Detroit tried to do—again, I don't know how successful—is a good concept: to work with the government, not on regulations independent of technology, but on both of these things combined. Instead of fighting each other on the regulation front, they're getting together when it's early in the game, when you can do something about regulation from

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## ... Federal R&D Aid Sometimes Crucial for Industry

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a technology viewpoint by taking a systems approach. That's very important for society as a whole and for competition.

**SGR.** *We are just at the beginning of these collaborations that you describe. Yet, the new Republican majority wants to tear them down. They are ideologically unacceptable.*

**Bloch.** Compared to the Congress today, the Reagan Administration was liberal. I think they're wrong. I think that anything that's built on ideology, on one-sided ideology, cannot stand the test of time. And they will find that out themselves. And they will turn around.

**SGR.** *Even before these programs have had time to produce an impact on the American economy, your own Competitiveness Council and others say American industry is now the most competitive in the world. Apparently, industry isn't doing so badly on its own.*

**Bloch.** We didn't do badly in 1975, when all of a sudden things collapsed on us. We were oblivious to some of the changes that were going on. We have recaptured some of the lost ground. The industry sector I'm familiar with, semiconductors, in particular, was under tremendous pressure and almost collapsed. It came back out of it by essentially focusing on what the competitor focused on, quality, quality, and quality, management, time to market, cost.

**SGR.** *Sematech [a consortium of semiconductor firms, subsidized by the Pentagon, soon to be wholly self-financed] is held up as a model of government-industry collaboration. But doubts exist about whether it actually did much for the American semiconductor industry.*

**Bloch.** Let me give you one data point. And you can say one data point is bad. Motorola, which is a member of Sematech, credits Sematech with the following: when Motorola started planning for their advanced semiconductor line in Austin—and it's a \$1 billion line—they went over all the equipment that they needed. And the majority of the equipment, when they started it, came out of Japan. There was nothing available here. When they finished up the job, they found it just had reversed. The majority came out of US companies. They credit Sematech for that turnaround. Is that important? I think it's important. Sure, it's only one data point. But a kind of important one. A lot of money and jobs were involved. I'll say Sematech paid back what was put into it. Secondly, it was not something which the government funded by itself. It was a joint funding of 50-50 for a number of years. It shows that sometimes the government needs to step in to get things moving in the right direction again. Industry by itself just isn't capable of doing it, because industry doesn't exist. It's a heterogeneous mass essentially which needs to be pulled together from time to time. I hope we don't have to do that very often, but when we have to do it, it's kind of important that we do it.

**SGR.** *Again we're hearing the warnings that other countries are increasing their spending on R&D and are getting ahead, or soon will. Is there validity to this?*

**Bloch.** I see some things happening which didn't happen before. I see institutions coming up in other countries, especially in Asian countries, that I think will be very impressive once they get to the point where they reach a certain amount of maturity. It takes a long time to build a new university. You don't build it in five years. You build over 10 and 20 years. I see that happening.

**SGR.** *Where?*

**Bloch.** Taiwan, Hong Kong, on and on. Even some of the Japanese universities. The Japanese have not focused on university research. They promised they would, and so they have been somewhat of a disappointment. But I would take their last statements more to heart than some other people do—that basic research is going to be emphasized and that they want to double it. I see something else happening which is novel. And that is that we not only have competition in manufacturing, in assembly, and things like that, but we are getting some competition in some of the intellectual areas. Example: software in India. It came out of nowhere. Today there are a large number of not just American, Japanese, and European companies. There are Indian companies. I was there a couple of years ago; there must have been 50 laboratories in Bangalore. And their output is exceptional, in terms of quality, as well as cost. It's as easy today to have a group in Bangalore as to have it in the room next door.

**SGR.** *Except for the Supercollider, the old R&D mega-projects are doing well, even in these hard times. The Space Station, for example, remains untouchable.*

**Bloch.** The message doesn't get through for reasons that you know very well. Political reasons. These have become political programs. They're not scientific. The Space Station was never a scientific program in the first place. Neither was SDI. That concerns me. There's still a lot of pork going on. You don't even have to look at these big programs. I went through the DOE laboratories. DOE had 30 laboratories. We always talk about seven or eight. They have 30. Some of them were established because of pork. You know the ones.

**SGR.** *What are you working on for the Council?*

**Bloch.** We have a study on the future of R&D in the country. And that will come out at the end of the year. We are focusing on what public policy should be in that arena. What do industry, academia, and government need to do, and how are all three going to interact? We started it before this Congress was elected. So, it was not in response to the Congress. Personally, I felt that the changes that we are going through, or need to go through, might really reflect on the institutions that we have. The institutions we have might not be the right ones in the end. And we want to take a look at all of these. We have an advisory committee, which is really different from a normal advisory committee, of about 50 people, mostly but not all from our membership; people from academia, from government laboratories, from industry—many companies, large and small; many different sectors. So, it's a pretty good cross section of the R&D enterprise.



# Republicans Open Attack on Environmental Science

After voting to gut the budgets and regulatory powers of federal environmental programs, House Republicans are following up with a campaign to impugn the scientific underpinnings of national environmental policy.

Reeking of paranoia and conspiratorial suspicions, the new enterprise may collapse under the combined handicaps of limited substance and endorsements that appear to be confined to a small, fringe cast of characters. However, there's no way of knowing where this new assault on science may go and how it might influence Congress.

The campaign feasts on occasional past missteps in the quest for environmental purity and the extravagant rhetoric of environmental enthusiasts, prominent among them Vice President Gore. However, though pledging fairness in gathering evidence, the starting point is disdain for mainstream environmental research and its policy applications.

The impresario in this production is Rep. Dana Rohrabacher, a right-wing California Republican who chairs the Energy and Environment Subcommittee of the House Science Committee. Rohrabacher charges that environmental science has been contaminated by politics, that honest dissenters are silenced by intimidation, and that public policy is misled by a reigning clique of politicians and scientists. To expose the mess, he says, he will hold a series of hearings titled "Scientific Integrity and Public Trust: The Science Behind Federal Policies and Mandates."

The opening session, September 20, under the heading "Stratospheric Ozone: Myths and Realities," focused on the 1992 decision to accelerate the industrialized nations' phase-out of chlorofluorocarbon (CFC) refrigerants, from the 50 percent reduction by 1998, specified under the 1987 Montreal Protocol, to total elimination by the end of 1995. US officials, in harmony with foreign counterparts, insist that the change was necessitated by evidence that CFCs were causing serious deterioration in the protective ozone layer.

Skeptically citing warnings that failure to act would increase the risk of skin cancer, Rohrabacher opened the hearing with a droll recollection of a panicky ozone warning in 1992 by then-Senator Al Gore, who raised the possibility of an ozone hole "above Kennebunkport"—the Maine summer home of President Bush. "We now know that 'the hole in the sky over Kennebunkport' was bunk," Rohrabacher declared, likening the episode to "a cry we heard before when the American people were scared into immediate removal of asbestos from schools and stopped eating apples because of Alar. This time," he said, "they managed to stampede the Congress and the President of the United States."

Filling in for an absent colleague, Rep. George Brown (D-Calif.), the ranking Democratic on the Science Committee, responded that "Gore exaggerated," but Brown added, "The scientific case for ozone depletion is extremely strong."

Questioning whether the equipment-replacement costs of the accelerated CFC phaseout were justified by the alleged health risks, Rohrabacher said the hearings would "take a

## Feuding on Science Policy

It's a little-league duel on the scale of Washington political feuds. But the rhetorical fusillades are startling, given that the two principals are mild-mannered and hold high rank at the normally discreet intersection of science and politics. Blame it, then, on heartfelt beliefs.

The animosity first surfaced in June when John Gibbons, the President's Assistant for Science and Technology, stopped suffering in silence and publicly denounced Republican fiscal assaults on his sector as "the scientific equivalent of book burning."

The description rankled the new Mr. Science on Capitol Hill, Chairman Robert Walker (R-Pa.) of the House Science Committee. In a letter July 17 to the President, Walker asserted, "The only 'book burners' with which I am familiar in recent world political history were the Nazi Party fanatics of Hitler's Germany." Deeming the words attributed to Gibbons in press reports so offensive as to be of suspect accuracy, Walker said he checked with the OSTP staff, which "did not deny that the statement quoted was accurate." Walker urged Clinton to instruct his staff in civility.

OSTP sources tell SGR that Walker's letter scored no impact at the White House and went unanswered.

The next round in the Gibbons-Walker affair occurred September 19, the day preceding Rep. Rohrabacher's ozone hearings, when Gibbons ridiculed Republicans on the ozone issue and attacked them for cutting science budgets and programs. Speaking at the University of Maryland, College Park, Gibbons described doubts about ozone-related risks as "incredible," and declared that "willful distortion of evidence has no place at the table of scientific inquiry." Unlike the Republicans, he suggested, the public recognizes that "ignorance is surely not the route to our salvation."

Walker returned fire on September 21, in a joint press release with Rep. Rohrabacher which accused Gibbons of putting on a "stunning display that this presidential science advisor is more political than scientific." Defending his hearing as balanced and open to all viewpoints, Rohrabacher denounced Gibbons' criticisms as "outrageous," and accused the Clinton Administration of tolerating "only those with politically correct opinions." Walker described himself as "appalled."

look at the science behind the regulations which government officials and the media have presented largely in emotional terms and hear from both sides equally."

The first witness was a member of the House, Rep. John T. Doolittle (R-Calif.), an attorney, who said the CFC-ozone relationship is "still very much open to debate," and that he was introducing legislation that day to postpone the phaseout

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## ... Congressman Hits "Peer-Review Mumbo-Jumbo"

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to the year 2000. Citing estimates of \$100 billion to wean the nation from CFCs, Doolittle said the EPA miscalculated the costs and benefits. In place of scientific facts, he asserted, "some NASA scientists, EPA officials, and extreme environmental organizations have forced the imminent CFC phase-out on the American people with fear and doomsaying."

Rep. Lynn Rivers, a Michigan Democrat, observed that the phaseout was supported by a heavy volume of research in peer-reviewed journals. Where was the peer-reviewed literature of the opponents? she asked

Doolittle replied: "I'm not going to get involved in peer-review mumbo-jumbo."

Next in the witness chair was the Republican House Majority Whip, Rep. Tom DeLay, of Texas, a businessman before entering Congress. "The science underlying the CFC ban is debatable," he said, adding that "The ban is the result of a media scare." Noting reports of fluctuations in ozone levels, DeLay said, "We're not giving Mother Nature enough credit" for recuperative power. DeLay has also introduced legislation to turn back the CFC ban.

Rep. Tim Roemer (D-Indiana) called DeLay's attention to a report, *Scientific Assessment of Ozone Depletion: 1994*, produced by the National Oceanic and Atmospheric Administration, NASA, the UN Environment Program, and the World Meteorological Organization. Roemer asked DeLay for his opinion of the publication, noting that it listed seven pages of authors and reviewers (about 300 in all) from academe, industry, and government agencies around the world. DeLay replied, "I haven't seen the study, so I can't give an opinion." But he asserted, "The conclusion is usually written before the study is done."

Roemer expressed doubt that so many scientists from diverse countries and institutions could be misled or willingly orchestrated for deceptive purposes. DeLay responded that he could furnish lists of scientists, too.

Rep. Rivers expressed surprise that DeLay had endorsed legislation to stretch out the CFC ban without having read "the most important study" on the subject.

DeLay again acknowledged that he hadn't looked at it, explaining that he relied for advice on critics of the ban, including a leading controversialist on the anti-government side of the ozone issue, S. Fred Singer, a member of a panel of six that followed DeLay to the witness table.

When they took their places, the proceedings turned nasty. First off was Robert T. Watson, Associate Director of Environment in the White House Office of Science and Technology Policy (OSTP) and former Director of NASA's Stratospheric Ozone Program. Speaking in a rapid-fire, excitable manner, Watson depicted the CFC-ban critics as scientific pygmies, not worth listening to. "My testimony," he said in a prepared statement, "represents the views of the very large majority of the international scientific community from academia, government laboratories, environmental

organizations and industry, not the views of single individuals with few, if any, relevant publications in peer-reviewed journals." Referring to Singer by name, he accused him of "irresponsibly" trivializing the ozone problem.

Watson's testimony was strongly backed by Daniel L. Albritton, Director of the Aeronomy Laboratory of the National Oceanic and Atmospheric Administration, who emphasized the depth and wide extent of agreement in the research community.

Next came Singer, with an impressive c.v. on the first page of his prepared statement: founding Director of the US Weather Satellite Service, Deputy Assistant Administrator of EPA, Chief Scientist of the US Department of Transportation, Professor emeritus of Environmental Science at the University of Virginia, and, currently, founder and President of The Science and Environment Policy Project, "a non-partisan, non-profit research group," in Fairfax, Va.

"I wish I could give as emotionally charged a presentation as my colleague," he said, referring to Watson. "But I'll try to be calm and rational." CFC fears, he told the Subcommittee, have been exaggerated. "You've been bamboozled."

Sallie Baliunas, a Senior Scientist at the George C. Marshall Institute, a conservative think tank in Washington, DC, agreed with Singer. Delaying the ban, she said, "would entail no significant risk to public health."

After the panel completed its prepared testimony, Rohrabacher commented: "Quite often in history, we see cases of all the experts on one side, and then a few years later, they're all on the other side." Ulcer therapy offers an example, he said. Milk used to be prescribed, and now it is considered "the worst thing."

Rep. Rivers then took off after Singer, inquiring whether his ozone papers were in peer-reviewed journals. Singer noted that he had recently published in *Science* and *Nature*—letters to the editor, as it turned, which, he insisted, were peer-reviewed. Questions were raised about one of his most recent publications, "The Ozone-CFC Debacle: Hasty Action, Shaky Science," this year in *Technology: Journal of the Franklin Institute*. The article reports "stifling" of debate on the CFC issue by "denial of funds to younger academic researchers who hold 'unconventional' views; the muzzling of senior scientists in government service," and other sins against scientific integrity.

Rather than addressing these serious allegations, Democrats on the Subcommittee wrested from Singer an acknowledgement that the Franklin publication is not peer-reviewed and has a circulation of only 400.

Baliunas echoed the theme of stifled dissent and intimidation of scientists who dispute the official government position on the risks of CFCs.

Rohrabacher promised a vigorous investigation of the charges, and asked Baliunas to send him a letter identifying "the groups inside and outside of government that tried to stifle discussion."—DSG

## In Print

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Technology Program, there's a surprising survivor—the Manufacturing Extension Partnership (MEP), an industrial-assistance program modeled on the Agricultural Extension system. With 41 centers operating in 31 states, MEP has acquired a supportive political base in Congress. The House has agreed to raise its budget, from \$74 million this year to \$81 million next year, which would fund an additional 18 centers. While Republicans are vowing to eliminate NIST's parent agency, the Commerce Department, proposals have been raised to transfer the NIST labs to the National Science Foundation, privatize them, or relocate them in a new federal Science and Technology Administration. The report is by Lennard G. Kruger and Wendy Schacht.

Order these reports through a House or Senate member. Senate switchboard, 202/224-3121; House, 202/225-3121. Cite the Congressional Research Service as the source, with report title and number.

### From the General Accounting Office (GAO), no charge:

**School Finance: Trends in US Education Spending** (GAO/HEHS-95-25; 55 pp.), reports that after increasing for a decade, average expenditure per public-school pupil leveled off in 1990. In looking at competition for public funds, the GAO report notes that between 1987-94, the "portion of state budgets designated for elementary and secondary education decreased by about 11 percent, while Medicaid's share increased sharply by 90 percent and corrections' [prisons, etc.] by 10 percent." The report was requested by three Democratic Senators, Jeff Bingaman (New Mexico), Christopher Dodd (Conn.), and Paul Simon (Illinois), who had expressed concern about the adequacy of funding for pupils at high risk for failure in school.

**National Parks: Difficult Choices Need to Be Made About the Future of the Parks** (GAO/RCED-95-238; 52 pp.) based on a sample that consisted of Yosemite, Glacier, and Shenandoah National Parks, and nine other "units" in the park system, the GAO concludes: "There is cause for concern about the health of national parks for both visitor services and resource management." With the maintenance backlog reportedly up from \$1.9 billion in 1988 to over \$4 billion at present, the GAO says the solution is more money, fewer parks, or a cut in visitor services. The school-finance and national-parks reports both list related GAO reports.

Order from: USGAO, PO Box 6015, Gaithersburg, Md. 20884-6015; tel. 202/512-6000; fax 301/258-4066.

### From the Natural Resources Defense Council:

**Formula for Failure: Consequences of Proposed Federal Science Funding Cuts** (45 pp., \$7.50, plus \$1.45 for shipping), a review of the fiscal devastation on federally supported environmental research that the House voted prior to the August recess. The Senate version, enacted for the most part after Labor Day, is generally less savage, but still would require serious reductions in the research programs.

The two chambers are now working on the final outcome. The White House, meanwhile, is warning of vetoes if the budget reductions go too far.

Order from: NRDC Publications Department, 40 West 20th St. New York, N.Y. 10011; mail orders only; California residents add 7.25 percent sales tax; checks to NRDC.

### From the Council on Competitiveness:

**Competitiveness Index: 1995** (51 pp., \$15, plus \$2.50 for shipping in the US, \$5 overseas), annual report from the Washington-based alliance of industry, universities, and organized labor, says that relative to its industrial competitors, the US has recently been doing well in the categories of standard of living, trade, productivity, and investment. The assessment, however, notes troubling long-term trends, including a slump in R&D financed by industry and rapidly rising higher-education costs, up 43 percent for private institutions over the past decade and 29 percent in the public sector. And it points out that compared to major industrialized nations, "US student interest in science and engineering is weak." In addition to statistical data, the report contains brief commentaries by 11 business executives, academics, and labor leaders.

Order from: Publications Office, Council on Competitiveness, 1401 H St. NW, Suite 650, Washington, DC 20005; tel. 202/682-4292; fax 202/682-5150.

### From the Southern Technology Council:

**Regional Forum** (quarterly, 12 pp., no charge), a newsletter reporting activities among academic, industrial, and government organizations aimed at stimulating economic activity in the 14 member states.

Order from: Southern Technology Council, PO Box 12293, Research Triangle Park, North Carolina 27709; tel. 919/941-5145; fax 919/941-5594; E-mail: <igt@encore.ncrcn.net>.

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# In Print

Official reports and other publications of special interest to the research community

(Copies of publications listed here are available from the indicated sources—not from SGR)

**From the White House Office of Science and Technology Policy (OSTP):**

**National Security Science and Technology Strategy** (71 pp., no charge), introduced as "the country's first comprehensive Presidential statement of national security science and technology priorities," this glossy production consists of strings of pre-fabricated prose interspersed with color photos and much self-congratulation. Unfortunately, it belabors the obvious but does little else on the subject of national security and science and technology. Typical passages: "Today's basic research lays the foundation for tomorrow's innovative development" and "Our investment strategy involves long-term research as well as near-term applications as it is only in hindsight that we are able to discern the revolutionary military capabilities provided by breakthroughs such as radar, digital computers, semiconductor electronics...." Nothing, however, about budgets and merely vague references to priorities. The report provides no guidance for insiders and little illumination for outsiders, thus raising a question: why did they bother? Answer: for a White House hemmed in by a hostile Congress and tight budgets, pamphlet writing is an accessible substitute for action.

Order from: Office of Science and Technology Policy, National Security and International Affairs Division, Executive Office of the President, Washington, DC 20500; fax 202/456-6028.

**Final Report of the Committee on Interagency Radiation and Policy Coordination: 1984-95** (ORAU 95/F-30; 37 pp., plus appendixes; price not available), *adieu* from the long-lingering and little-heard-of Reagan-era creation that was supposed to coordinate radiation policy among warring federal agencies. On September 30 its functions were absorbed by the Committee on Health, Safety, and Food Research of the National Science and Technology Council. The parting report notes "the gradual loss of scientific expertise in radiation sciences within our Federal agencies," adding that in recent years, the Committee was not able to achieve interagency consensus on radiation use and safety.

Order from: National Technical Information Service, US Department of Commerce, 5285 Port Royal Rd., Springfield, Va. 22161; tel. 1-800/553-6847; fax 703/321-8547.

**From the British Library, Science Reference and Information Service:**

**Science and Technology Policy: An International Perspective** (139 pp., £36 [\$56]), a selection of papers on research-related issues in Europe, the US, and elsewhere, originally published in the British Library's bi-monthly journal *Science, Technology, and Innovation* (£100 per year in UK; \$175, US). The collected articles are grouped

under headings of Financial Pressures in the Advanced Economies, Countries in Transition (Russia, the former East Germany, and South Africa), International Scientific Collaboration, and Science in the Industrial Setting.

Order from: Turpin Distribution Services, Blackhorse Rd., Letchworth, Herts SG6 1HN, U.K.; tel. 01462 672-555; fax 01462 480-947; checks payable to British Library.

**From the National Institutes of Health, National Institute on Aging (NIA):**

**The Threshold of Discovery: Future Directions for Research on Aging** (360 pp., no charge), report of a Congressionally mandated task force, discusses the state of aging research and lists 192 recommendations culled from 2800 provided by specialists in numerous fields and organizational settings. The report deals with research in the Department of Veterans Affairs, as well as the NIA, and calls for substantial increases in spending over the next five years "on all forms of research on aging issues—biological, medical, health services, psychological, social, economic, and demographic." Financially, of course, Congress is pointed in the other direction, with plans for substantially reducing research and other domestic programs over the next seven years.

Order from: National Institute on Aging Information Center, PO Box 8057, Gaithersburg, Md. 20898-8057; tel. 1-800/222-222; Internet: <naiinfo@access.digex.com>.

**From the Science Policy Research Division of the Congressional Research Service, part of the Library of Congress, no charge:**

**Space Activities of the United States, CIS, and Other Launching Countries/Organizations: 1957-1994** (95-873 SPR; 180 pp.), a concise, comprehensive chronicle of the space age, briefly describes the space programs and lists all the launches and payloads of all the participants: China, the ex-Soviet Commonwealth of Independent States, the 14-nation European Space Agency, India, Israel, Japan, and the US. The report, by Marcia S. Smith, also summarizes many of the major policy studies conducted over the past decade on the future of the US program.

**Drug Regulation: Historical Overview and Current Reform Proposals** (95-962 SPR; 24 pp.), traces the evolution of the Federal Food, Drug, and Cosmetic Act, and discusses recommendations for changes, pending legislation, and innovations introduced by the Food and Drug Administration under the Clinton Administration's program to "reinvent" government. Blanchard Randall wrote the report.

**The National Institute of Standards and Technology [NIST]: An Overview** (95-30 SPR; 6 pp.), describes the programs at NIST, distinguishing between the industrial-technology activities targeted for elimination by Congressional Republicans and NIST's traditional, inhouse research activities, which appear to be bound for a respectable budget increase. However, amid Republican denunciations of "corporate welfare" and a zero budget for NIST's Advanced

(Continued on Page 7)



